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ABSTRACT

To provide a Louisiana State reading improvement program with information that could improve instructional efficiency, a study was conducted to determine the relationship between student time on task and eight broad categories of classroom activities used by teachers during reading and language arts instruction. The eight activities studied were (1) silent reading, (2) oral reading, (3) writing/composition, (4) drill and practice, (5) teacher-led instruction, (6) discussion, (7) tests/quizzes, and (8) noninstructional management. Data were collected by trained observers who viewed a random sample of second, third, and fifth grade classes in eight school systems participating in a state program to develop outstanding reading programs. The results suggested that the eight activities, when examined individually, did not explain a useful amount of variance in student time on task rates. However, taken as a model of classroom activity, they did explain enough variance to warrant further study. Observed correlations among the various activities suggested patterns of teaching behavior during reading and language arts instruction. (FL)

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THE RELATIONSHIP BETWEEN CATEGORIES OF CLASSROOM ACTIVITY AND STUDENT ENGAGEMENT IN READING AND LANGUAGE ARTS INSTRUCTION

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ABSTRACT

This study was conducted to determine the relationship between student engagement and with broad categories of classroom activities employed by teachers during reading and language arts instruction. The purpose of the study was to provide the state reading improvement program with information that could be used to improve the efficiency of instruction. Data were collected through classroom observations conducted by field staff who were trained in the observation system by the evaluator of the program. Regression techniques were used to analyze the data.

The results suggest that the eight classroom activities, when examined individually, do not explain a useful amount of variance in student engagement rates. However, taken as a model of classroom activity, they explain enough variance to warrant to warrant further study. The observed correlations among the various classroom activities suggest patterns of teaching behavior during reading and language arts instruction.

THE RELATIONSHIP BETWEEN CATEGORIES OF CLASSROOM ACTIVITY AND STUDENT ENGAGEMENT IN READING AND LANGUAGE ARTS INSTRUCTION

INTRODUCTION

Research reviews of time on task studies are generally consistent in agreeing that time has a positive and predictable relationship with student achievement and that the relationship grows stronger as "time" is more narrowly defined (Borg, 1980; Fendlason, 1983; Graden, Thurlow, and Ysseldyke, 1982). Thus, more variation in student learning can be explained as observations of classroom time move from the time used in instruction, to the time students are actively engaged in this instruction, to the time that students are actively engaged in instructional tasks in which they meet with a high level of success (Borg, 1980).

Other research concerned with time on task has concentrated on the teacher behaviors that lead to student learning. Stallings (1980) found that learning among secondary remedial students was positively correlated with interactive on-task teacher behaviors such as discussion and review, reading aloud, praise and support for on-task work, and supportive corrective feedback, while it was negatively related to noninteractive on-task activities such as classroom management and silent reading. Using somewhat different teacher behavior variables, the Beginning Teacher Evaluation Study reported that student achievement was related positively to the teacher's diagnostic ability, prescription of appropriate tasks, provision of academic feedback to students, and the use of time to give directions and discuss the structure of the lesson (Fisher, Berliner, et al, 1980). In a review of research literature, Brophy (1982) concluded that effective teachers minimize time used

in transition and classroom management activities and that student achievement is higher with structured curricula and in settings in which much of the instruction is received directly from the teacher.

If both time on task and teacher behaviors are related to learning, it is reasonable to ask whether teacher behaviors are related to time on task. Several authors have found the relationship between time on task and classroom activities to be a complicated one (Edenhart-Pepe, Hudgins and Miller, 1981; Kirley, 1981). The Edenhart-Pepe et al study found that student engagement interacted with both teacher engagement and activity structure. In grade 5 mathematics instruction, Kirley found that there was little variety in the method of instruction and that less frequently used methods increased student attention when class time was sufficient to permit the use of varied approaches. Anderson and Scott (1978) examined five different teaching methods and did not find complete consistency in the degree to which these were correlated with student time on task across classrooms. The authors concluded that the effectiveness of different methods varied by the type of students; for example, those with low aptitude and academic self concept were most attentive in a question-and-answer format with the teacher, or during seatwork. In the Beginning Teacher Evaluation Study, Romberg (1980) concluded that the variables describing the teacher's diagnostic ability were positively related to academic learning time, as were the teacher's structuring time and directing activities, and the amount of substantive interaction between the student and an instructor.

Suggestions to teachers that they improve student learning by increasing the amount of time students are on task are useful only insofar as they can offer ways in which teachers can increase student engagement. The study

reported here examined engagement and categories of classroom activity during reading and language arts instruction among elementary school classrooms.

OBJECTIVES

The major objective of this study was to determine the relationship between student engagement and eight broad categories of classroom activities employed by teachers during reading and language arts instruction. The specific questions addressing this objective were as follows.

1. What are the correlations between student engagement rates and categories of classroom activity during reading and language arts instruction in grade 2, 3, 4 and 5 classrooms?
2. To what extent do the categories of classroom activity account for variations in student engagement rates in grade 2, 3, 4 and 5 classrooms?
3. What are the intercorrelations among the categories of classroom activity in grade 2, 3, 4 and 5 classrooms?

DESCRIPTION OF THE STUDY

The data for this paper were drawn from an evaluation conducted by the Bureau of Evaluation, Louisiana Department of Education, for the Department's SPUR (Special Plan Upgrading Reading) Project. Classroom observations of student time on task were carried out as part of the SPUR evaluation for the 1980-1981 and 1981-1982 school years. This activity has since changed; evaluation staff now train local school system personnel to observe classrooms for their own use in instructional improvement.

SPUR is a reading improvement project directed toward kindergarten through grade 8 students, and operating in 63 of the State's 66 public school systems. The project functions through eight regionally based technical assistance teams of reading specialists who serve as change agents in

working with teachers, principals, and central office staff. SPUR staff originally requested time on task data as part of a comprehensive program evaluation in order to gain baseline information about the amount and use of reading instructional time among schools participating in the project. The staff was also interested in the types of teaching activities that occurred during reading and language arts instruction. SPUR personnel worked with the evaluator to develop the categories of classroom activity reported here.

Student Engagement Methodology

The method used in this study to measure student engagement was one developed by Research for Better Schools, Inc. (RBS, 1980). This is a system that combines teacher logs of time used in instruction with observer recordings of student engagement. It produces three kinds of information. These are described briefly to illustrate the system:

- Allocated time: the average number of minutes per day per student spent on instruction in a given content area. Instructional time outside the classroom (e.g., Chapter 1 pull-out remediation) is not included. Allocated time is computed through multiplying the minutes of instruction by the proportion of students assigned to that instruction.

- Engagement rate: the proportion of time a student is actively attending to, or participating in, instruction. Engagement rate is computed by recording the proportion of students engaged during different points in an observation period and then averaging these for the total observation period.

- Engaged time: the average minutes per day a student is engaged in instruction in a given content area. Engaged time is the product of allocated time and engagement rate.

The RBS observation system was selected for the SPUR evaluation because it appeared to be relatively simple for an observer to use and because it provided data that SPUR field staff could interpret easily to

classroom teachers who wished to use it for instructional improvement. Classroom teachers recorded allocated time by logging the minutes of instruction in reading and language arts for the entire day on which an observation was conducted and noting the number of students assigned to each activity. The observers recorded student engagement during a 15-minute period on that day. All classrooms were observed three times -- at the beginning, middle, and end of an instructional period in reading or language arts.

Classroom Activity Categories

The purpose of the evaluation was to provide useful information to SPUR staff about the use of instructional time. The project's staff worked closely with the evaluator to develop categories of classroom activities that were of interest to SPUR. These represented a combination of content and instructional factors unique to the project. The categories were intended to give SPUR a description of what occurred during reading and language arts instruction, and to be both exhaustive and mutually exclusive. They were:

1. Silent reading: the teacher assigned student(s) to read orally from a basal text in reading or another content area, or from informal reading materials such as a newspaper or literature; or teacher read orally to students for some instructional purpose other than giving direction.

2. Oral reading: the teacher assigned student(s) to read orally from a basal text in reading or another content area, or from informal reading materials such as a newspaper or literature; or teacher read orally to students for some instructional purpose other than giving directions.

3. Writing/composition: the teacher assigned student(s) handwriting, composition, or creative writing work. This category did not include writing in the context of taking a test or completing short responses in workbooks or worksheets.

4. Drill and practice: the teacher assigned student(s) to content instructional work requiring short written or oral responses.

Examples were writing in workbooks, receiving oral phonics drills, or writing spelling words. The category included instructional activities but did not include tests or quizzes.

5. Instruction: the teacher imparted information or gave explanations. This included directions that told students "how" but not those management directions that told students "what" to do.

6. Discussion: the teacher elicited oral student responses that gave students' opinions or interpretations of instructional material or that required students to give further information. Discussion was more open-ended than drill and practice.

7. Test/quiz: the teacher measured student knowledge and understanding, orally or in a written form; the attempt was to measure or diagnose mastery rather than to increase learning through repetition and practice.

8. Noninstructional management: the teacher gave explanations or directions in a noninstructional context, shifted from one instructional task to another, or disciplined or controlled student behavior.

The observer recorded at each point during the classroom observation which of these categories were occurring. It was possible for several to take place simultaneously. The number of times each category was recorded was then totalled for the entire observation period.

Observers

The observers were generally SPUR Technical Assistants I, reading specialists assigned to work two days a week with the schools from which the study sample was drawn. In a few cases classrooms were observed by SPUR Team Leaders, reading specialists who managed the eight regional SPUR teams and who were also familiar with these schools. In one case the observer was a local central office staff member.

All observers were trained by the project evaluator; the observers, in turn, trained teachers to record allocated time. The training was offered in 1981 and 1982, and, in each case, data were accepted only from observers trained that year. The materials were adapted slightly from those prepared

by RBS. The six-hour sessions included practice in observing videotaped classroom activities and completing the data collection forms. The observers were directed to practice in teams of two until their engaged time observations were within 90 percent agreement. Later anecdotal reports suggested that about three-fourths of them did so.

Sample

The samples for both years were drawn from the SPUR Demonstration Schools. These were in eight school systems across the State and were representative of regional as well as urban/rural differences. However, as the name suggests, the schools were those chosen to develop and demonstrate outstanding reading programs. All had completed or were addressing a series of criteria for excellent school-wide reading programs. Standardized reading achievement testing carried out as another part of the SPUR evaluation showed average student performance in reading at these schools was 53.0 NCEs or higher for each grade level included in this study. As a result, the reading instruction in the observed classrooms was probably better than could have been expected in many other schools.

Table 1 shows the number of classrooms for each grade level observed in 1981 and 1982. In 1981 the sample included all grade 2 and 4 classrooms in the SPUR Demonstration Schools. A random sample of grade 2, 3 and 5 classrooms was drawn from the SPUR Demonstration Schools in 1982.

TABLE 1

NUMBER OF CLASSROOMS OBSERVED BY GRADE LEVEL, 1981 and 1982

Year	Grade 2	Grade 3	Grade 4	Grade 5	Total
1981	83	--	75	--	158
1982	31	33	--	30	94
Total	114	33	75	30	252

Although this study is concerned only with the relationship between student engagement rates and the various categories of classroom activity, it is important to recognize that this relationship occurs within the larger framework of the use of classroom time. Table 2 reports the average allocated time, engagement rate, and engaged time by grade level for the classrooms studied.

TABLE 2

AVERAGE ALLOCATED TIME, ENGAGEMENT RATE, AND ENGAGED TIME BY GRADE LEVEL

	Grade 2	Grade 3	Grade 4	Grade 5
Allocated Time in Minutes	141	140	114	122
Engagement Rate	86%	90%	87%	89%
Engaged Time in Minutes	123	126	99	109

The figures for allocated time, engagement rate, and engaged time are higher than comparable figures for grades 2 and 5 reported in the Beginning Teacher Evaluation Study (Rosenshine, 1980). This could be expected from the quality of the schools' reading programs and from the fact that the teachers knew their performance would be included in the evaluation of SPUR. Any interpretation of later findings should recognize that these data are probably drawn from the best performance possible among skilled teachers.

RESULTS

Engagement rates used in the evaluation were the means of those for the three observation periods in each classroom. The frequencies of classroom activities were the sum of the times an activity was observed in a classroom across the three observation periods. All data were analyzed using the SAS (Statistical Analysis System) program package (SAS Institute, 1979). Table 3 shows engagement rate data for the classrooms by grade level. This table includes only those 249 classrooms for which data were complete and that were included in the subsequent analyses. Engagement rate is expressed as a percent. It can be seen that not only were the rates high for each grade level, but that the standard deviations reflect little variation from the means within grade levels.

TABLE 3

ENGAGEMENT RATE MEANS, STANDARD DEVIATIONS, AND MAXIMUM AND MINIMUM VALUES BY GRADE

	Mean	Standard Deviation	Maximum Value	Minimum Value	Number of Classrooms*
Grade 2	86.21	7.24	99.00	62.67	112
Grade 3	89.56	6.31	99.00	69.33	33
Grade 4	86.93	7.58	98.00	63.00	74
Grade 5	89.19	6.43	98.33	74.00	30

*Data in this and following tables based on 249 classrooms for which there was complete information.

Table 4 reports the average occurrence of the eight categories of classroom activity by grade level for the total 45 minutes (three 15-minute sessions) during which each classroom was observed. The same three activities were reported most frequently for each grade, although the rank order of the most frequent and second most frequent varied. These activities were instruction, drill and practice, and discussion. Only one of the eight activities, discussion, showed a completely consistent trend across grade levels. The frequency of discussion declined in each grade from 2 through 5. Two factors need to be considered in comparing the frequencies of activities across grades. The first is the amount of time used in each activity; for example, silent reading occurred more frequently in grade 5 than in grade 2, and the opposite was true for oral reading. The second

factor is the total number of activities observed in each grade level. In grade 3 the total for the 45 minutes was 67.8, indicating that these classrooms were more likely to contain several activities at the same time than were the grade 5 classrooms in which the total activities observed were 56.77 over a 45-minute period.

TABLE 4

MEAN OCCURRENCE AND PERCENT OF TIME USED FOR INSTRUCTIONAL ACTIVITIES DURING 45 MINUTES OF OBSERVATION, BY GRADE

	Grade 2	Grade 3	Grade 4	Grade 5
Silent Reading				
number	5.00	6.33	4.63	6.73
percent	11.1	14.1	10.3	15.0
Oral Reading				
number	5.78	4.06	4.64	2.43
percent	12.8	9.0	10.3	2.4
Writing and Composition				
number	4.30	2.21	2.37	2.17
percent	9.6	4.9	5.3	4.8
Drill and Practice				
number	15.29	18.00	11.55	17.03
percent	34.0	40.00	25.7	37.8
Instruction				
number	16.95	14.45	16.23	12.47
percent	37.7	32.1	36.1	27.7
Discussion				
number	12.38	10.19	9.52	8.60
percent	27.5	22.6	21.2	19.1
Test/Quiz				
number	2.16	7.27	5.03	2.47
percent	4.8	16.2	11.2	5.5
Noninstructional Management				
number	4.30	5.29	6.38	4.87
percent	9.6	11.8	14.2	10.8
TOTAL NUMBER	66.16	67.8	60.35	56.77

Correlation of Classroom Activities With Engagement Rate

The correlations between student engagement rate and classroom activity are shown for each grade on Table 5. Here, as in subsequent tests of significance, the significance was set at a probability of .05.

TABLE 5

CORRELATION OF CLASSROOM ACTIVITIES WITH ENGAGEMENT RATE, BY GRADE

	Grade 2 (N = 112)	Grade 3 (N = 33)	Grade 4 (N = 74)	Grade 5 (N = 30)
Silent Reading	-0.0269	0.2136	0.1983	0.1946
prob	0.7780	0.2326	0.0903	0.3027
Oral Reading	-0.0031	0.2640	0.0761	0.0243
prob	0.9745	0.1377	0.5196	0.8987
Writing & Composition	0.0575	0.1522	0.1476	-9.3527
prob	0.5468	0.3979	0.2095	0.0559
Drill and Practice	-0.0560	-0.0364	-0.0699	-0.2039
prob	0.5301	0.8407	0.5543	0.2799
Instruction	0.1176	0.1758	0.0809	-0.1264
prob	0.2167	0.3277	0.4935	0.5056
Discussion	0.1095	0.1789	0.3612	-0.0227
prob	0.2506	0.3192	0.0016*	0.9051
Test/Quiz	-0.0029	-0.0342	0.2241	0.4340
prob	0.9760	0.8503	0.0549	0.0166*
Noninstructional Management	-0.40087	-0.7466	-0.4372	-0.5230
prob	0.0001*	0.0001*	0.0001*	0.0030*

*p ≤ .05

The only significant correlation for grades 2 and 3 was between engagement rate and noninstructional management. The correlation coefficient was -0.40 in grade 2 and -0.75 in grade 3. Since noninstructional management is an activity in which the teacher directs or controls off-task behavior (e.g., instructions to begin an assignment, discipline) this negative relationship was a logical given. For grade 4 classrooms, engagement was correlated significantly with noninstructional management (r=-0.44) and with discussion (r=0.36). In grade 5 the significant correlations were between engagement rate and noninstructional management (r=-0.52) and test/quiz (r=0.43). When tested independently of one another, the categories of classroom activity other than noninstructional management were generally not related to student engagement rates in the classrooms observed.

Models Correlating Classroom Activity With Engagement Rate

The study was also interested in the extent to which the eight classroom activities as a single model accounted for variation in student engagement rates. Tables 6 through 9 report regression models for each of the grade levels examined. The analysis was a stepwise regression operating under the constraint that no variable could be added to the model unless its inclusion produced a model accounting for an increase of at least .02 in the R-square value of the preceding model.

The model for grade 2, shown on Table 6, included only noninstructional management. This factor was significantly and negatively related to student engagement. The total R-square for the model was 0.1763.

TABLE 6

STEPWISE REGRESSION OF CLASSROOM ACTIVITIES WITH ENGAGEMENT RATE, GRADE 2 (N=112)

	DF	SS	MS	F	Prob ≥ F
Regression	1	936.126	936.126	21.06	0.0001*
Error	110	4889.417	44.449		
Total	111	5825.543			

R-Square=0.1763

	B-Value	Std Error	Type II SS	F	Prob ≥ F
Intercept	88.755				
Noninstructional Management	-0.603	0.131	936.126	21.06	0.0001*

*p ≤.05

Grade 3 results are given in Table 7. Here the total model had an R-square of 0.6678 and included three variables. Writing and composition was significantly and positively related to engagement rate, and noninstructional management was significantly and negatively related to engagement. Oral reading was included in the model but did not account for a significant amount of variance.

TABLE 7

STEPWISE REGRESSION OF CLASSROOM ACTIVITIES WITH ENGAGEMENT RATE, GRADE 3 (N=33)

	DF	SS	MS	F	Prob ≥ F
Regression	3	825.192	275.064	17.79	0.0001
Error	29	448.331	15.460		
Total	32	1273.523			
R-Square=0.6678					

	B Value	Std Error	Type II SS	F	Prob≥ F
Intercept	91.502				
Oral	0.188	0.116	40.518	2.62	0.1163
Writing & Composition	0.401	0.167	88.934	5.75	0.0231*
Noninstructional Management	-0.892	0.134	688.187	44.51	0.0001*

*p ≤ .05

The grade 4 model is shown in Table 8. The R-square for the total model was 0.3642. Four classroom activities were included, and each met the established significance level. Three of the activities were positively related to engagement rate: writing and composition, discussion, and test/quiz. Noninstructional management was negatively related to student engagement.

TABLE 8

STEPWISE REGRESSION OF CLASSROOM ACTIVITIES WITH ENGAGEMENT RATE, GRADE 4 (N=74)

	DF	SS	MS	F	Prob ≥ F
Regression	4	1520.443	380.111	9.80	0.0001*
Error	69	2667.531	38.805		
Total	73	4197.974			
R-Square=0.3622					

	B Value	Std Error	Type II SS	F	Prob ≥ F
Intercept	84.114				
Writing & Composition	0.360	0.178	192.758	4.97	0.0291*
Discussion	0.333	0.098	448.646	11.56	0.0011*
Test/Quiz	0.274	0.114	225.741	5.82	0.0185*
Noninstructional Management	-0.412	0.115	495.673	12.77	0.0006*

*p ≤ .05

Table 9 presents the results for grade 5. The model included four classroom activities and had a total R-square of 0.4530. Only one variable, noninstructional management, met the established significance level. Its correlation with engagement rate was negative.

TABLE 9

STEPWISE REGRESSION OF CLASSROOM ACTIVITIES WITH ENGAGEMENT RATE, GRADE 5 (N=30)

	DF	SS	MS	F	Prob ≥ F
Regression	4	543.592	135.898	5.17	0.0035*
Error	25	656.516	26.261		
Total	29	1200.108			
R-Square=0.4530					

	B Value	Std Error	Type II SS	F	Prob ≥ F
Intercept	90.597				
Silent Reading	0.095	0.097	24.950	0.95	0.3390
Writing & Composition	-0.399	0.212	93.515	3.56	0.0708
Test/Quiz	0.405	0.203	104.312	3.97	0.0573
Noninstructional Management	-0.448	0.217	112.064	4.27	0.0494*

*p ≤.05

The eight classroom activities were tested as a single model because they were developed to describe exhaustively all of the kinds of activities in which students could be directed during reading and language arts instruction. It was expected that the amount of variance explained by the models would increase with grade level. This expectation was based on the argument that the engagement rates of older children would be more directly controlled by the teacher than would the engagement rates of younger students.

The preceding analyses suggest that the classroom activities do act together in accounting for variance among engagement rates. The regression models produced considerably stronger results than did the correlation of

individual classroom activities with engagement rate. It is not, however, clear that classroom activities increase their effect upon student engagement rate as students mature. The total R-square was greater for grade 3 than for any other grade. However the amount of R-square explained did increase in the expected direction for grades 2, 4, and 5.

There is also a pattern when the variables entered into the models for different grades are examined. Noninstructional management appears in the models for grades 2, 3, 4 and 5. Writing and composition occurs in the models for grades 3, 4 and 5, although it is nonsignificant and negative in grade 5. Test/quiz is added in grades 4 and 5.

Intercorrelations of Classroom Activities

Although teachers could assign students to tasks involving more than one of the classroom activities at a given time, it was expected that some pairs of activities could be associated and that some activities could be mutually exclusive. Table 10 reports the intercorrelations of the eight classroom activities. Data were collapsed across grade levels for this analysis because it was felt that grade level would not affect the way in which teachers used the activities together. The analysis was a simple correlation providing correlation coefficients and probability levels.

TABLE 10
INTERCORRELATIONS OF CLASSROOM ACTIVITIES

	Oral Reading	Writing & Composition	Drill & Practice	Instruction	Discussion	Test/ Quiz	Noninstructional Management
Silent Reading	0.2312	-0.0276	0.1237	-0.1851	0.0415	-0.0738	-0.1713
prob	0.0002*	0.6652	0.0513	0.0034*	0.5147	0.2460	0.0067*
Oral Reading		0.2411	0.0467	-0.2767	0.0922	-0.0705	-0.1345
prob		0.0001*	0.4634	0.0001*	0.1470	0.2680	0.0339*
Writing & Composition			-0.0120	-0.1359	-0.0889	-0.0643	-0.1161
prob			0.8512	0.0321*	0.1618	0.3122	0.0673
Drill & Practice				-0.1888	-0.0708	-0.1272	-0.0610
prob				0.0028*	0.2656	0.0450*	0.3375
Instruction					0.1688	-0.0511	-0.1236
prob					0.0076*	0.4223	0.0518
Discussion						-0.1389	-0.1807
prob						0.0285*	0.0042*
Test/Quiz							-0.0557
prob							0.3812

*p ≤.05

Twelve of the pairs of activities were significantly correlated. Three of these pairs were positive relationships: between oral reading and silent reading (r=0.23), oral reading and writing and composition (r=0.24), and instruction and discussion (r=0.17).

Nine of the statistically significant correlations were negative, indicating activities that tended to be mutually exclusive. Noninstructional management was correlated with silent reading (r=-0.17), oral reading (r=-0.13), and discussion (r=-0.18). Instruction bore a significant relation to four other activities. These were silent reading (r=-0.19), oral reading (r=-0.28), writing and composition (r=-0.14), and drill and practice (r=-0.19). Test/quiz was related to drill and practice (r=-0.13) and discussion (r=-0.14).

The correlations show the extent to which teachers tended to mix or separate activities during the 45 minutes in which their classrooms were observed. Some of the relationships are logically obvious. For example, if a teacher listens to oral reading, she or he cannot also deliver direct instruction at the same time, and a negative correlation would be expected between the two activities. Instruction appears to preclude reading, writing, and drill activities; discussion does not occur during quizzes. In examining the positive correlations, oral and silent reading activities were paired, as were oral reading and writing, and instruction and discussion. From the point of view of instructional management, the most interesting relationships are the ones between noninstructional management and the other activities of oral reading, silent reading, and discussion. These are the ones in which student engagement could be expected, from the effect of noninstructional management, to be highest.

DISCUSSION

The results presented suggest that the eight classroom activities do not explain a useful amount of variance in student engagement rates when they are examined individually. However, taken as a complete model of classroom activity, they explain enough variance to warrant further study. The different classroom activities show some correlations that suggest patterns of teaching behavior during reading and language arts instruction. The overall conclusion from this paper is that examination of student engagement during different types of instructional or content area activities initiated by the teacher appears justified. Most of the prescriptive literature for increasing student engagement is concerned with general classroom management or instructional practices in isolation from subject areas. Obviously the same teaching methods cannot always be used in all cases, and it is useful to know which general types of classroom activity are related to higher and lower engagement rates among students.

Two factors could have lessened the strength of these data. The first is that the classrooms observed showed very high engagement rates, and limited variation among the engagement rates for different classrooms. Future studies should deliberately select a wider range of quality in teaching and schools, and should be conducted as a research or technical assistance effort, not as an evaluation of a program in which teachers are participating and presumably have a vested interest.

The second factor lay in the way in which the raw data were initially analyzed. The engagement rates were the average of the 15 observations made during a single observation period, and were then averaged to a mean engagement rate for the three observation periods in each classroom. Further study in this area should work with the individual engagement rate

observations (15 x 3 = 45) for each classroom and should correlate these with the classroom activity recorded at each of these 45 points. This would allow a more direct and accurate examination of the relationship between engagement and classroom activity. It was not possible to do this in the present study because the raw data were returned to the classroom teachers as soon as the engagement rates had been calculated from them.

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